Sampson's ERD Explanation

Here's an example of constructing an ERD… is my solution the only possible one for this scenario? **NO!** But it's a reasonable one…

What's included in an ERD:

An ERD is **only** a depiction of the entities that are represented in an information system. Typically, an entity is a noun… and it is something about which you store information. The attributes of an entity will relate directly to a table.
When reading narrative describing an information system, how do you find the entities?

- List the nouns
- Determine whether or not information on the noun should be persistent… meaning will the IS store information on the noun.
- Highlight the verbs associated with the nouns. These are potential relationships between your entities.

For example a man walks into a coffee bar. (No, this is not a joke!) He goes up to the counter, and places an order for a tall café mocha. He pays for the coffee, and receives his coffee as well as a receipt.

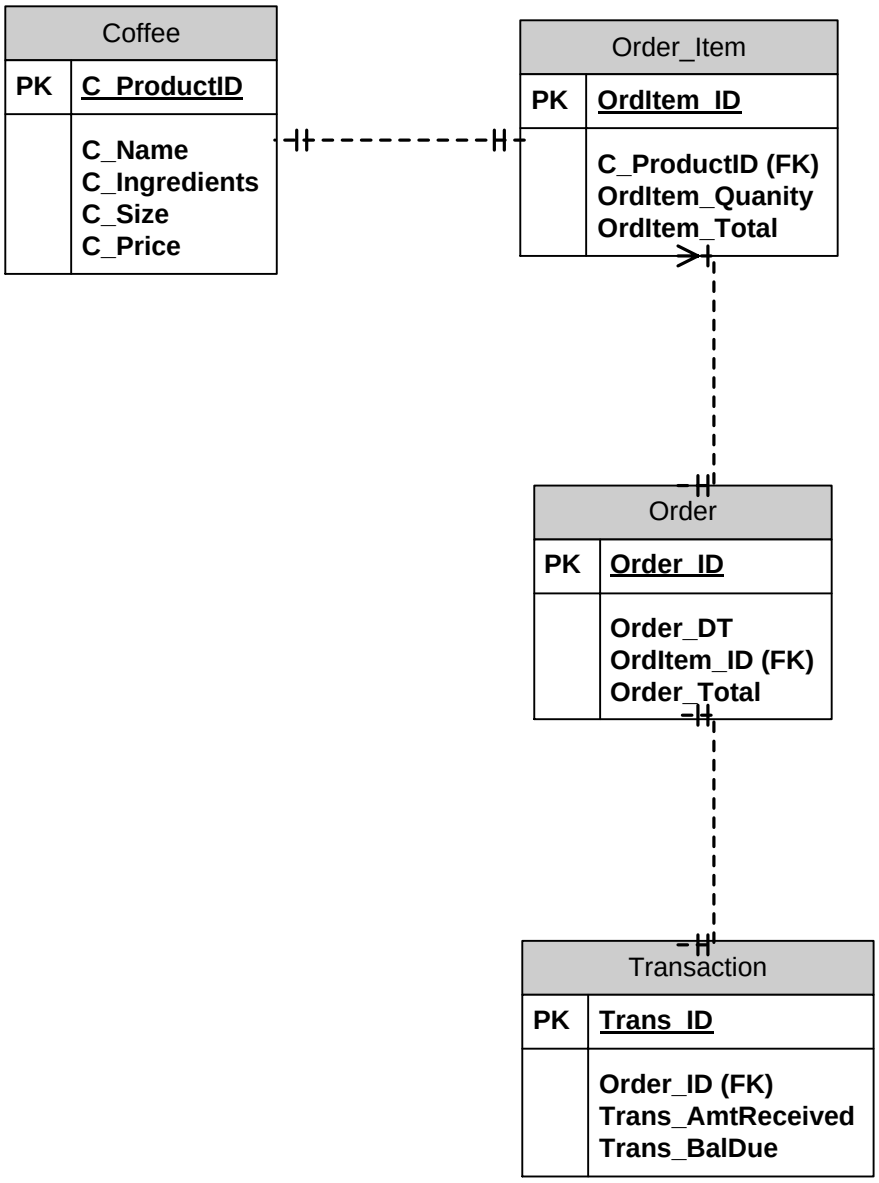
So… first off, we list the nouns; man, coffee bar, counter, order, coffee, receipt.
From this list, we determine which nouns we are going to store information on… we don't keep information on the customer, or the coffee bar (unless we have more than one location), or the counter. We do need info on the coffee (name, size, cost), the order (date, time, coffee order line item, quantity, total of coffee orders), and the receipt (order amount, amount received, balance due.)

Now the verbs…walks in, places order for a coffee, pays for order, receives a receipt.

Ok. Time to build an ERD..

This ERD shows us the primary entities, their attributes/characteristics, and how they are related… it does NOT show the processes for an order, or a transaction. Merely what data is stored, and how the stored data is related.

So we have a coffee entity with associated attributes, an order item which consists of one and only one coffee type, quantity of those coffees, and total cost for that order item. We have an order which has the date/time, and any number of order items, and the grand total of all order items.
The transaction entity consists of one and only one order, amount received, and balance due… we'll need this to balance the register at the end of the day.



What's NOT included in an ERD:

Flow of information and processes are not included in an ERD. Those are depicted in a Data Flow Diagram, typically constructed during the analysis and design of a new system, or an implementation of new functionality for a system. You can show business rules on an ERD, but again, those would be constraints that are going to assist the DB modeler in understanding the system.